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formed a barrier impenetrable by the air, as it rushed out of the lungs into this cavity; and of course the whole of what was thrown into the cavity of the abscess at each expiration, would be drawn back again into the lungs, at the next inspiration, and thus the surrounding parts might escape tumefaction: and this passing and repassing of the air will fully account for the noise, which the patient complained of.



II. *Account of a Locked Jaw.* By AARON DEXTER,
M. D. F. A. A.

Boston, January 26th, 1790.

S I R,

I BEG leave to present to the Academy, a particular history of the unfortunate case of my friend, Dr. Edward Wyer. It rarely happens, that the particular circumstances attending the disease, with the full effect of applications, and a constant variation of practice, as symptoms appeared, can be attended to as was the case in this instance: owing to his having no other nurses than such physicians, with his own assistance, as were able to change the mode according to appearances.

I presume, it may give some information to medical gentlemen, who have not had an opportunity of being witnesses to such distressing scenes.

I am, with the greatest respect,
your most obedient servant,

A. DEXTER.

The Hon. JAMES BOWDOIN Esq. }
President of the A. A. S. }

*An Accurate History of a Locked Jaw, from a wounded Membrane, that terminated fatally.**August 25th, 1789.*

EDWARD WYER, a gentleman of the medical profession, trod upon a shingle nail, which passed through his shoe, into the ball of his left foot, directly over the tendon leading to the second toe. A few drops of blood followed. He applied only a little petrolium to the part.

The next day, a slight lameness ensued, with nausea at the stomach. The third day, it was apparently well ; and he attended his usual business without any regard to his foot.

Sunday, September 7th, whilst at dinner, he observed some difficulty in swallowing. Monday 8th, he perceived a considerable stiffness in the muscles of his neck. On Tuesday the 9th, it increased, but not so much as to prevent his riding ten miles in the afternoon : and he concluded, he was attacked with the mumps. He applied, in the evening, vol. linament to his neck and jaws. During the night, he was restless ; and after sleeping, repeatedly found, that he had bit his tongue.

Wednesday morning the 10th, he perceived a stiffness in his back, as though he had been sleeping on a board ; and could scarcely open his mouth. Upon his attempting to speak, or swallow, spasms seized his throat. At this time, he was fully convinced, that he had a locked jaw : and the affair of the nail was recollected, with all its circumstances.

During the forenoon, his disorder increased rapidly. At 12 o'clock, a medical friend called on him by accident, he made an effort to speak, but could not for some minutes.

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As soon as he was able, he related his case, and asked advice. They conversed on the several different remedies that have been recommended. Opium he conceived of no avail : he said, that he had made patients under his care, eat it by the pound. The warm bath was mentioned ; but he objected. He agreed, that a cold bath was the only thing that could save him. Mercurial frictions were mentioned ; but he would not consent ; and answered, that he had often tried them without any sort of advantage. He then recited the cases in the 6th vol. of the London Medical Observations, proving the good effects of cold water ; and, at the same time, produced his own minutes of a case of a locked jaw, cured apparently by cold bathing ; which took place about twelve months before in a neighbouring town.

On examining his foot, nothing was perceived but a very slight speck where the nail entered. There was no foreness, tenderness, or pain in that part, more than in any other. It was agreed to apply the cold bath immediately. He placed himself on a low stool, naked ; and two buckets of cold water were thrown on his head : after which, he placed himself between two blankets on his bed. An agreeable warmth soon took place ; and he expressed relief, from the application, particularly at his stomach ; and could swallow better.

The first application was about 1 o'clock, in the afternoon ; and repeated exactly in the same manner, four times.

At 6 o'clock, he was evidently relieved. After the fourth bath, he rose from the stool, with great satisfaction ; could speak with ease ; and drink without difficulty. During the five hours, he took liberally of broth and gruel. The fifth

bath had a very different effect : it produced a tremor, and great anxiety. Spasms attacked him more violently than ever, particularly on the back of his neck ; which was embrocated with oil of cloves, diluted with spirits of wine. The spasms were very violent also in the muscles of his jaws. To prevent his mouth closing completely, which he apprehended, he had introduced a stick between his teeth ; and this was of great importance to him, during his life. At this time his foot was examined ; and the speck taken out ; which did not shew any trace of the nail under the scarf skin. A blister, as strong as could be made, was applied to the part : but he was utterly averse to having the tendon examined ; conceiving it too late to make any application to the part originally affected, as the disease had become general.

He wished to have the system supported with wine, bark, and nourishment.

The bath of cold water was tried again, at 8 o'clock ; but it evidently increased his disorder ; and from that time, he would never consent to its application.

During the night, several enemas were administered, of a strong decoction of red bark, and snake root. At his usual bed time, an anodyne of two grains of opium was given him : he passed a very restless night. He soon found, that cold drinks produced less spasm than warm ; which led him to take every thing that he was able to swallow, cold.

Thursday 11th, it was proposed to him, to pass a seton, covered with cantharides, under the skin of the affected part. To this he consented, with a design to inflame the part : but it produced no good effects ; it seemed rather to increase his irritability. In the course of the day, three enemas were administered of a decoction of bark, as before.

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He had a great aversion to bark in any form, received into his stomach ; as it generally, in health, produced nausea. The object of this application was to give tone to the stomach, presuming that debility was the immediate effect of the disease.

The gentlemen of the medical profession, who were present, suggested to him the use of the warm bath ; as every other application had proved of little effect : to this he consented. About 4 o'clock, in the afternoon, he was placed in a bathing machine, with water heated to 90° of Fahrenheit's thermometer, in which he remained seventeen minutes. It produced a good effect, in relaxing the muscles in general, particularly of his body and arms. Growing faint, he was taken out ; covered with flannel ; and put on his bed. A most profuse diaphoresis ensued ; and he felt so much relieved, that he said, he then had a secret hope that he should recover : but, within an hour, on attempting to drink some lemonade, his spasms returned as violently as before, and more general ; but seemed to remit at shorter periods.

At 8 o'clock, he was anxious to try the warm bath again ; and was placed in it as soon as possible, but without any good effect. He could bear it but a few minutes, before he became faint ; and spasms attacked him in this situation. He passed a better night than he expected ; and obtained some sleep, by keeping his head accurately balanced.

Friday 12th. This morning he seemed better ; his spasms were not so violent ; and he was much encouraged. A laxative enema was administered ; as nothing had passed his bowels since Wednesday morning. In the afternoon, spasms returned more violent than ever, and more general. The

warm

warm bath was again used, but without procuring any relief: and he passed a very distressing night.

Saturday 12th, a cathartick of calomel was proposed, which met his approbation. It is to be observed that he now preserved his reason entirely; and was unfortunately able to judge for himself of his situation, and the full effect of every application. He had, from the first moment, considered his case out of the reach of medical assistance.

This morning, electricity was proposed, which he approved. And such sparks were drawn as he was able to bear, without producing spasms, from the parts most affected. The electric fluid was passed through him in various directions, for about one hour. He thought himself calmer in consequence of the application; and passed the day without violent spasms. Electricity was repeated in the evening, but without any apparent effect. His sensibility had much increased since Thursday night. Constant attention was necessary from the physician, to keep the muscles exactly balanced.

In the evening, it was agreed to make use of mercurial frictions; as there had been some similar cases related, in which this application had succeeded. It was used through the night very freely. A laxative enema was also administered without effect. His thirst was very great. From 9 o'clock in the evening, to 6 o'clock the next morning, he drank five pints of cold water, and as much lemonade.

Sunday 13th. A discharge from his bowels was produced; but was not considered as sufficient. And ten grains of calomel were given him, with one hundred drops of laudanum. He passed a tolerable day without any violent spasms; took but little food, as his stomach nauseated it; but drank cold water and lemonade in large quantities. At 4 o'clock

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in the afternoon, an enema was administered of broth and half an ounce of laudanum. It was agreed to omit the mercurial frictions ; and keep him as quiet as possible ; and to give him as much food as could be retained on his stomach, or by his bowels. The laudanum soon had an effect. At 5 o'clock, he lay quietly sleeping under its influence. Appearances were favourable at this time, in the opinion of all the medical gentlemen present. He continued quiet, and slept easy till ten o'clock ; when a laborious respiration took place. An attempt to awake him was made without effect ; and the difficulty seemed to increase very fast. He was then raised up in his bed , and carried to a chair, without any signs of life, except an interrupted catching for breath, and a very feeble pulse. The most stimulating volatiles were applied to his mouth, nose, temples, &c. without any effect. At 11 o'clock, his respiration was scarcely perceptible ; and his pulse intermitted. He was laid on his bed as a dead man. In a few minutes, his pulse seemed more connected. He was raised up on the side of the bed ; and all the windows were opened ; and an enema was administered of a solution of cathartick salts in strong peppermint water ; which, in a few minutes, operated very largely ; and part of the laudanum was evacuated. His respiration gradually recovered ; and his pulse rose full. These circumstances induced his medical attendants to repeat the enema as before ; at half past 12 o'clock, he was again placed in his bed, and breathed tolerably easy ; and had a copious involuntary discharge. The external stimulating applications were continued ; and his spasms returned in a slight degree, just sufficient to lock his jaws during their continuance. Every muscle had been perfectly relaxed
since.

since 10 o'clock. His respiration grew gradually better; and at 3 o'clock, he was able to speak; and found to his great surprise, the muscles of his jaws relaxed, and as free from spasm as he ever was. His thirst was violent: he drank from 3 o'clock to half past 5, one quart of cold water, two quarts of lemonade, and a bottle of spruce beer. After this he slept quietly half an hour. There seemed to be a singular alteration, and he was very much elated; and fully believed, that a complete crisis had taken place. He continued free from any spasm, particularly in his jaws and neck, till seven o'clock in the morning.

Monday 14th. At 8 o'clock his left leg and thigh were extremely affected with spasms. The violence and pain of them were so great, that during three hours, he was, for the first time, deprived of his reason. At the intervals he begged for an enema of laudanum, as the only thing that could save him from the severest torture. Electricity was first tried on the part, but without any effect. Afterwards, an enema was given with one hundred drops of laudanum. The spasms on the abdominal muscles forced it from him immediately. His sensibility was so extremely increased, that opening a door, walking in his room, or speaking louder than a whisper, would produce spasms too distressing for language to express. Soon after the glister came from him, he had several free discharges; and a diarrhoea took place, which lasted through the day. In the evening, a julap of oil of cinnamon, and thirty drops of laudanum was given, which checked the discharges; but he passed a very restless night. Towards morning his spasms relaxed, and he slept a little.

Tuesday 15th. This morning he seemed tolerably easy. At 12 o'clock, a spasm seized his diaphragm and lungs.

Extreme

Extreme difficulty of respiration came on. And he appeared to sink under his complaints ; took his leave of his family ; and made several arrangements respecting his property, and his funeral, with great composure : satisfied that, from the parts attacked, it was impossible for him to live but a few hours. Vescicating tincture of cantharides was applied on his breast ; and a tea spoonful of Hoffman's anodyne mineral water was given him, without any effect. When life seemed just quitting him, a large discharge of flatus from the intestines, followed by a fetid discharge of excrement, gave immediate relief. An enema of a solution of cathartick salts was administered ; which gave him two discharges. He seemed totally disappointed in being thus relieved ; and considered it as a singular medical change.

At 7 o'clock in the evening, he took a large spoonful of Huxham's tincture of bark, with two spoonsful of wine ; which proved very grateful. His pulse was very feeble, but his spasms seemed to have left him altogether. It was agreed, that he should repeat the last mentioned medicine every hour. He asked for cold cider, which he found very grateful to his taste. At 8 o'clock, he repeated the tincture of bark and wine ; and asked to be turned in his bed, which was immediately done. He perceived a spasm, and called for a pillow to raise his head a little ; which being placed agreeably to his wish, he stretched himself out during the spasm ; and his respiration and pulse ceased instantly, without the least emotion. The medical gentlemen, who constantly attended him, supposed that a spasm seized his heart, which deprived him of life.

Wednesday

Wednesday morning. As it had been invariably his request, that, after his death, his foot might be examined, his family consented. The skin and cellular membrane were removed; and the nail could be traced to the sheath of the tendon, which was found to have been perforated; it did not enter the tendon; but passed by the side of it to the periosteum of the bone, which it had not affected.

Under the tendon was a small cavity, about the size of a pea, discoloured throughout, with evident marks of previous inflammation.

The phalanx of the toe was taken off; but no further discovery was made. From Wednesday, the 10th of September to his death, he never was without some medical friend in his chamber. And from Friday morning, he had two, and frequently three or four with him. His situation was such, that without some person well acquainted with the profession, his distress must have been exceedingly increased.